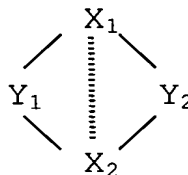


What is claimed is:

1. A composition for inhibiting the RNase H activity of a retrovirus reverse transcriptase comprising an inhibitory agent of Formula I:



Formula I

wherein,

X<sub>1</sub> and X<sub>2</sub> are antiparallel complementary oligonucleotide strands that associate to form a duplex;

X<sub>1</sub> is 2 to 24 nucleotides in length;

X<sub>2</sub> is 2 to 24 nucleotides in length;

Y<sub>1</sub> is 0 to 8 nucleotides in length;

Y<sub>2</sub> is 0 to 8 nucleotides in length;

at least one of Y<sub>1</sub> or Y<sub>2</sub> is 2 to 8 nucleotides in length; and

Y<sub>1</sub> and Y<sub>2</sub> each independently contain a ribonucleic acid; 2',5'-linked ribonucleic acid; or combination thereof wherein said ribonucleic acid comprises the sequence 5'-UUYG-3'/2' (SEQ ID NO:1).

2. A composition of claim 1, wherein X<sub>1</sub> and X<sub>2</sub> of Formula I are comprised of 3',5'-linked ribonucleic acid; deoxyribonucleic acid; 2',5'-linked ribonucleic acid; arabinonucleic acid; 2'-fluoro-arabinonucleic acid; locked nucleic acid; peptide nucleic acids; or a combination thereof

3. A composition of claim 1, wherein X<sub>1</sub> and X<sub>2</sub> of Formula I are comprised of 3',5'-linked ribonucleic acid.

4. A composition of claim 1, wherein  $X_1$  and  $X_2$  of Formula I are comprised of deoxyribonucleic acid.

5        5. A composition of claim 1, wherein  $X_1$  and  $X_2$  of Formula I are comprised of a combination of 3',5'-linked ribonucleic acid and deoxyribonucleic acid.

6. A composition of claim 1, wherein  $X_1$  and  $X_2$  of  
10 Formula I are 3',5'-linked ribonucleic acid and are 4 to 10 nucleotides in length.

7. A composition of claim 1, wherein  $Y_1$  and  $Y_2$  are a  
3',5'-linked tetranucleotide of the sequence 5'-UUYG-3'  
15 (SEQ ID NO:1).

8. A composition of claim 1, wherein said composition is a cyclic structure.

20        9. A method for inhibiting the replication of a retrovirus comprising contacting a cell infected with a retrovirus with a composition of claim 1 which inhibits the RNase H activity of a retrovirus reverse transcriptase thereby inhibiting the replication of the  
25 retrovirus in said cell.

10. A method for preventing or treating a retrovirus infection comprising administering to a subject having or at risk of having a retrovirus infection an effective  
30 amount of a composition of claim 1 which inhibits the RNase H activity of the retrovirus reverse transcriptase so that the replication of the retrovirus is inhibited and

the retroid virus infection in said subject is prevented or treated.